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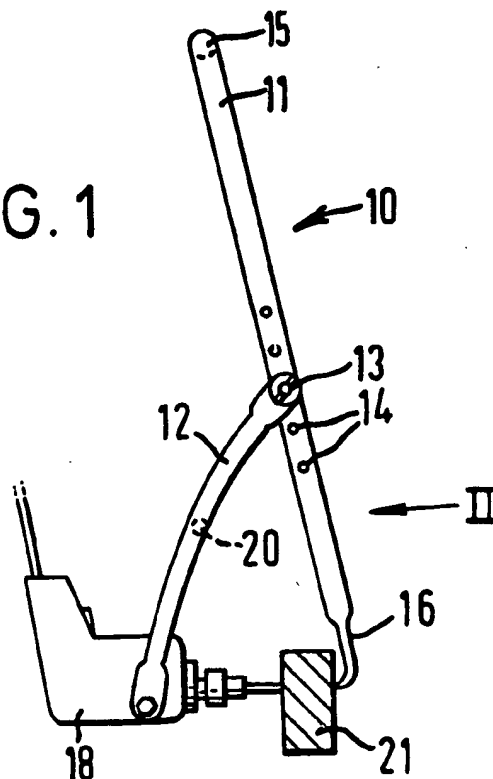
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(54) Lever device for attachment to  
a portable electric drill

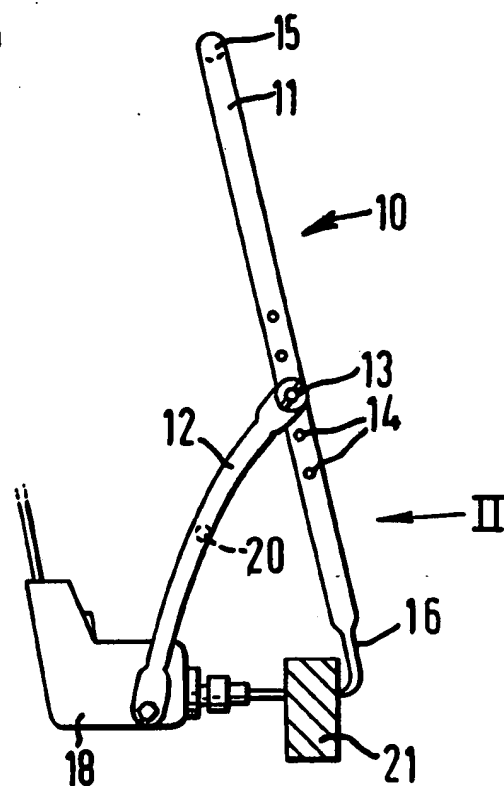
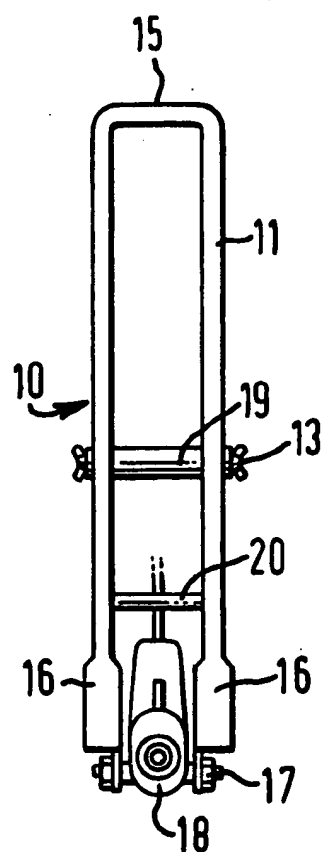
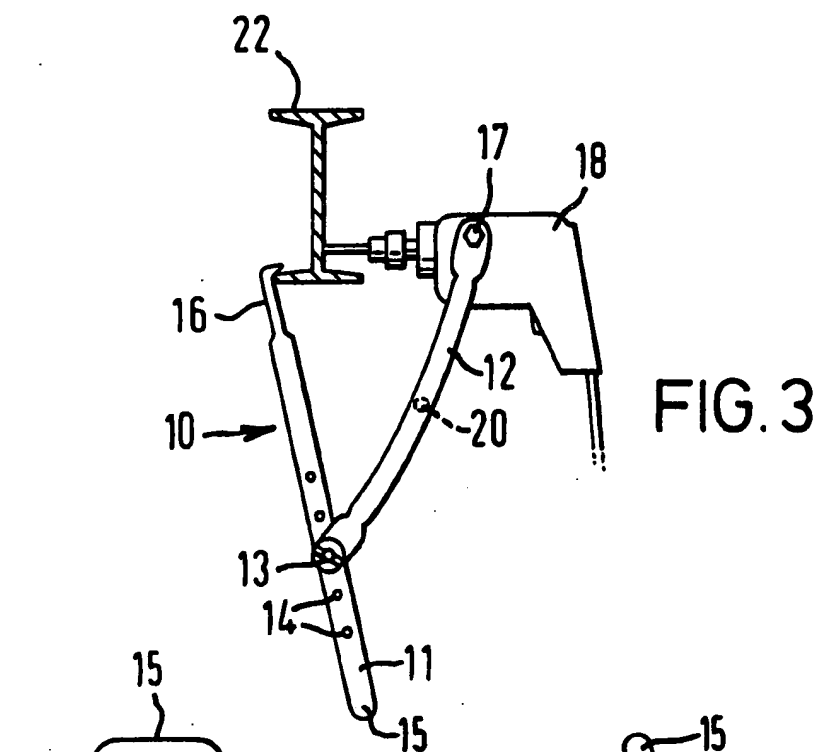
(57) A lever device 10 for use with a  
portable electric drill 18 for use in  
applying a force to the drill 18 to  
move it relative to a workpiece 21 the  
device 10 consisting of a U-shaped  
lever member 11 whose end 16 is  
curved so as to engage a workpiece

21 and form a fulcrum about which  
the lever 11 can be rocked, and lever  
members 12 which are pivotally  
connected at 13 to the lever 11 and  
connected by a bolt 17 to the drill 18.  
The device 10 enables a force to be  
applied to the drill 18 where the drill  
18 is located at working positions  
where the operator cannot readily  
apply a manual force to the drill 18.

FIG. 1



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# SPECIFICATION

## Lever device for attachment to a portable electric drill

This invention relates to a lever device for use with a portable electric drill, the lever device being used to apply a force to the drill to move it relative to a workpiece.

When using a portable electric drill to drill holes in a workpiece located in a position where the operator can not readily apply a manual force to the drill to urge it towards the workpiece, the operator soon becomes fatigued and the drilling of such holes becomes a tiresome and time consuming operation. This is particularly the case where a portable electric drill is used to drill holes through beams or girders in situ in a building for the purpose of passing cables or pipes through the beams or girders.

According to the present invention there is provided a lever device for attachment to a portable electric drill to enable a force to be applied the drill to move it relative to a workpiece, comprising a first lever member provided at one end with means for engaging a workpiece, said means forming a fulcrum about which the lever member can be pivoted relative to the workpiece, and a second lever member having one end pivotally connected to the first lever member and its other end being provided with means for pivotally connecting it to the portable drill, said second lever member in use transmitting force from the first lever to the drill upon pivoting of the first lever member about said fulcrum.

An embodiment of the invention will now be described by way of an example, with reference to the accompanying drawing, in which:—

Figure 1 is a side elevation of a lever device according to the present invention attached to a portable drill and positioned for drilling a workpiece located below the operator,

Figure 2 is a view of the lever device taken in the direction of arrow II indicated on Figure 1, and

Figure 3 is a side view of the lever device according to the present invention positioned for drilling a workpiece located above the operator.

The lever device is generally indicated at 10 and comprises a lever member 11 which is substantially U-shaped and a pair of lever members 12 each of which is pivotally connected at 13 to one of the limbs of the lever member 11. Each limb of the lever member 11 is provided with a row of holes 14 so that the position of pivot connection 13 can be adjusted along the limb. The bridge portion 15 of the lever member 11 forms a handle which can be gripped by the operator. The free end of each limb of the lever member 11 is provided with a portion 16 which at its outer end is curved and whose outer end is bevelled and/or provided with teeth to enable it to bite into a timber workpiece.

Each lever member 12 is curved in side elevation and at its free end is provided with a transverse hole in which is received a bolt 17 which extends through a bore in a portable electric

drill 18. The bore in the portable drill 18 is the bore which is normally used to fix a handle to the portable drill 18. If a portable drill 18 is used which is of the type not having a handle then the portable drill 18 will be provided with an attachment to enable the free end of each lever 12 to be connected to the portable drill 18.

A spacer member 19 extends between the limbs of the lever member 11 and a spacer member 20 extends between the lever members 12. It will be appreciated that the lever members 12 may also comprise a single substantially U-shaped lever member.

When the lever device 10 and drill 18 is used for drilling holes in a workpiece located below the operator, such as in a wooden floor supporting beam 21 to which access is gained by removing a floor board, then the device 10 is positioned as shown in Figure 1 with the edge of the portions 16 engaged with the side of the beam 21 remote from the side from which drilling is to take place. The operator will steady the drill 18 with one hand and grip the bridge portion 15 with the other hand and pivot the lever member 11 in a clockwise direction as viewed in Figure 2 about the end of portion 16 which acts as a fulcrum. The lever members 12 will thereby transfer the force to the drill 18 to move it in a direction towards the beam 21 during drilling.

When the lever device 10 and drill 18 is used for drilling holes in a workpiece located above the operator, such as rolled steel joist 22 shown in Figure 3, the device 10 is positioned so that the portions 16 engage the lower flange of the joist 22 at the side remote from that from which drilling is to take place. The operator steadies the drill 18 with one hand and pivots the lever member 11 with the other hand in a clockwise direction as viewed in Figure 3.

It will be appreciated that the lever member 11 may comprise a single lever arm and that only a single lever 12 need be provided.

## CLAIMS

1. A lever device for attachment to a portable electric drill to enable a force to be applied to the drill to move it relative to a workpiece, comprising a first lever member provided at one end with means for engaging a workpiece, said means forming a fulcrum about which the lever member can be pivoted relative to the workpiece, and a second lever member having one end pivotally connected to the first lever member and its other end being provided with means for pivotally connecting it to the portable drill, said second lever in use of the device transmitting force from the first lever to the drill upon pivoting of the first lever member about said fulcrum.

2. A lever device as claimed in claim 1, in which said means provided at said one end of the first lever member comprises an end portion of the lever member which is curved, the outer end of said portion being bevelled and/or provided with teeth.

3. A lever device as claimed in claim 1 or claim

2, in which said first lever member is substantially U-shaped and a pair of second lever members are pivotably connected to the limbs of the first lever member.

5 4. A lever device as claimed in any preceding claim, in which said means for connecting the second lever member to a drill comprises a bolt which extends through a bore in the drill.

10 5. A lever device as claimed in any preceding claim, in which the second lever member can be

connected to the first lever member at any one of a plurality of positions.

15 6. A lever device for attachment to a portable electric drill to enable a force to be applied to the drill to move it relative to a workpiece substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

20 7. A portable electric drill having a lever device as claimed in any preceding claim attached thereto.

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